Company Name:	Recleim, LLC	**Permit Writer:**	James C. Robinson
Permit Number:	CM-0080-0152	**Date:**	**DRAFT**

DATE APPLICATION RECEIVED: November 25, 2014
DATE OF LAST INSPECTION: There have been no inspections of this facility at the time of this permit.

FACILITY DESCRIPTION: This facility is an appliance recycling facility in Graniteville, SC. The facility consists of one refrigerant recovery system (Emission Unit ID: RS01), one processing line capable of recovering CFCs contained in appliance foam (Equipment ID: LN01), a processing line to disassemble E-waste and white goods (Equipment ID: LN02), and a catalyst burner (Equipment ID: B001). Additionally, the facility uses the following control devices: a catalytic oxidizer, a caustic scrubber, and two baghouses.

PROJECT DESCRIPTION: This project is for the initial conditional major permit, which will be a lifetime permit. Note that because there are no special circumstances warranting, emissions reporting will be changed from semiannual to annual to be consistent with conditional major permits.

SOURCE TEST REQUIREMENT

Source	Pollutant / Attribute	Frequency*	Citation
SC01	HF Control Efficiency	Biennial	S.C. Regulation 61-62.1, Section II.E
CX01	VOC Control Efficiency	Biennial	S.C. Regulation 61-62.1, Section II.E

*Note: An initial source test was required for each source, and was conducted May 2015. The sources were shown to in compliance (See Source Evaluation Summary dated July 31, 2015).

SPECIAL CONDITIONS, MONITORING, LIMITS

Per SC Regulation 61-62.5, Standard No. 3, Section V (A - E), this facility was required to conduct an initial waste stream analysis, to include the classification of the waste stream (hazardous or non-hazardous). The initial test was performed and approved by BAQ's Source Evaluation Section (See "Waste Gas Characterization" Summary dated May 4, 2015). Additional tests will not be necessary unless the waste stream routed to the catalytic oxidizer changes. The condition in construction permit 0080-0152-CA-R1 that addressed this requirement will not be rolled into the conditional major permit.

Emissions

There is no change in emissions from what was established in construction permit 0080-0152-CA-R1.

FACILITY WIDE EMISSIONS		
Pollutant	**Uncontrolled Emissions**	**Controlled/Limited Emissions***
	TPY	**TPY**
PM	592	6.04/<100, <250
PM_{10}	592	6.04/<100, <250
$PM_{2.5}$	592	6.04/<100, <250
SO_2	0.01	N/A
NO_X	1.55	N/A
CO	1.3	N/A
VOC	329	3.37/<100, <250
HCl – HAP, TAP	414	0.83/<10
HF - Highest Single HAP	424	0.85/<10
Total HAP	838	1.70/<25

* See Synthetic Minor Regulatory Applicability Review below for details on limited emissions.

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OPERATING PERMIT STATUS
This facility does not currently have an operating permit, but is being issued a Conditional Major Operating Permit. (See Synthetic Minor Regulatory Applicability Review Below).

REGULATORY APPLICABILITY REVIEW

Regulations	Comments/Periodic Monitoring Requirements
Section II.E – Synthetic Minor	The following federally enforceable limits were all established with construction permit 0080-0152-CA: Less than 100 TPY PM_{10}, $PM_{2.5}$, and VOC, each, to avoid being defined as a major source for Title V; and less than 10 TPY single HAP and 25 TPY total HAP to avoid being defined as a major source for Title V and MACT. The construction permit 0080-0152-CA implicitly established synthetic minor limits for PSD avoidance with the 100 TPY limits. However, to make these limits clear and explicit, the Conditional Major Permit will be public noticed to establish the following limits: Less than 250 TPY PM, PM_{10}, $PM_{2.5}$, and VOC, each, to avoid being defined as a major source for PSD. The table below is a summary of synthetic minor limits after the issuance of the Condition Major Permit.

CP	Date Limit Established	Pollutant	Emission Limitation (TPY)	Regulation Avoidance
CA	11/14/13	PM_{10}, $PM_{2.5}$, VOC	<100, each	TV
CA	11/14/13	Single HAP	<10	TV, MACT
CA	11/14/13	Total HAP	<25	TV, MACT
N/A	Effective date of this permit	PM, PM_{10}, $PM_{2.5}$, VOC	<250, each	PSD

PM emissions will be controlled by baghouses (BH01and BH02). HAP emissions will be controlled by the Air Purification System Scrubber (SC01). VOC emissions will be controlled by incineration in the Air Purification System Catalytic Oxidizer (CX01).

Standard No. 1	This facility does not operate fuel burning equipment as defined in this regulation. B001 burns natural gas but is considered to be direct fired.
Standard No. 3 (state only)	CX01, a catalytic oxidizer, is subject to this standard. CX01 will be classified as an Industrial Incinerator. CX01 controls VOC emissions by combustion, for example: $2\ C_5H_{10} + 15\ O_2 \rightarrow 10\ CO_2 + 10\ H_20$ However, the refrigerants (CFC, HFC and HCFC) are being converted through a hydrolysis reaction and not via a combustion reaction. For example: $CF_2Cl_2 + 2\ H_2O \rightarrow CO_2 + 2\ HCl + 2\ HF$

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REGULATORY APPLICABILITY REVIEW	
Regulations	**Comments/Periodic Monitoring Requirements**
	Section III (I) for Industrial Incinerators applies Opacity and PM emissions limits: 20% and 0.5lb/10^6 BTU total heat input. Section IV (B) for New Sources requires compliance upon startup. Section V (A - E) requires an initial waste stream analysis, to include the classification of the waste stream (hazardous or non-hazardous). Note: This requirement has been fulfilled (See BAQ Source Evaluation's "Waste Gas Characterization" Summary dated May 4, 2015) and the condition in the construction permit will not be rolled into the conditional major permit. Additional test will not be necessary unless the waste stream routed to the catalytic oxidizer changes. Section V (J) requires that all information used to determine compliance with this section (that is, MSDS, waste manifests, waste analyses) must be kept on site for a period of five years and made available to the Department upon request. Section VIII (D)(5) requires PM Testing. However, as this source combusts gaseous material a waiver request has been granted. Section IX (D) of this standard allows a facility to be exempt from operator training for control devices that combusts only gaseous waste. An exemption has been granted.
Standard No. 4	LN01 and LN02 are each subject to a PM limit based on the equation in Section VIII(B). Emissions from each source, including fugitives, are subject to 20% opacity limits. All non-enclosed operations are subject to the fugitive emission requirements of Section X. Equipment ID RS01 emits no particulate matter, therefore it has no PM limit. The equipment determined to be part of each separate process are listed below.

Process Boundaries
Blowing Agent – Containing Appliance Recycling: LN01
E-Waste – Containing Appliance Recycling: LN-02
Catalyst Burner: B001

The limits are based on maximum process rate and associated emissions are shown below:

Process	Max Process Rate (ton/hr)	PM Limit (lb/hr)	PM Uncontrolled (lb/hr)	PM Controlled (lb/hr)	Monitoring
LN01	10	19.2	67.58	0.68	Control Device Maintenance, Visual Inspections

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REGULATORY APPLICABILITY REVIEW	
Regulations	**Comments/Periodic Monitoring Requirements**
	<table><tr><td>LN02</td><td>10</td><td>19.2</td><td>67.58</td><td>0.68</td><td>Control Device Maintenance, Visual Inspections</td></tr></table> The recycling lines have uncontrolled emissions higher than the potential PM limit. Therefore, the routine control device inspection and maintenance and visual inspections will be required to insure compliance. A PM limit is not applicable to B001, as the Catalyst Burner does not have a Process Weight (the Process Weight definition excludes liquids and gases used solely as fuels).
Standard No. 5	This facility was not in existence in 1979 or 1980.
Standard No. 5.2	Per section I.B.1 "Any source emitting NOX listed on the Regulation 61-62.1, Section II(B), Exemptions", the Catalyst Burner (B001) is exempt from all requirements of this regulation as its rated heat input capacity is less than 10×10^6 Btu/hr and burns virgin gaseous fuels.
Standard No. 7	This facility does not fall under any of the PSD 28 special source categories, and therefore has a major source threshold of 250 TPY for any pollutant subject to this standard. Based on the federally enforceable limits taken, this facility will be classified as a synthetic minor PSD source.
61-62.6	As this facility is not in an area considered "a problem area;" they are subject to the state-wide requirements listed in Section III. The inherent design of the processes and building structure should be considered sufficient to comply with this regulation. Additionally, visible fugitive dust will not be discharged beyond the lot line of the property.
40 CFR 60 and 61-62.60	The facility doesn't contain any sources subject to any NSPS standard. In addition, the facility submitted the following reasoning's as to why they are not subject to CCCC - New Source Performance Standard for Commercial and Industrial Solid Waste Incinerators: This regulation is applicable to facilities operating solid waste incinerators. The standard could potentially be applicable to the catalytic abator, (CX01). However, per §60.2265, an incinerator is any device that combusts solid waste for the purpose of reducing the volume of the waste by removing combustible matter**.** As the catalytic abator does not reduce the volume of the refrigerants and blowing agents combusted, it is not considered to be a solid waste incinerator and not subject to NSPS Subpart CCCC. Consider the following: 1. CFC, HFC, and HCFC used as refrigerants. 2. CFC, HFC, and HCFC used as blowing agents. 3. VOC, such as cyclopentane, used as a blowing agent. For both considerations 1 and 2, the compounds that are being converted are being done so through a hydrolysis reaction and not via a combustion reaction.

REGULATORY APPLICABILITY REVIEW	
Regulations	**Comments/Periodic Monitoring Requirements**
	$CF_2Cl_2 + 2\ H_2O \rightarrow CO_2 + 2\ HCl + 2\ HF$ Where the chemical breakdown of a compound is due to a reaction with water. Excess water is not introduced into the system. With SC's relatively high humidity, sufficient quantities of water are pulled into the system from ambient air. Because they are not combusted, Subpart CCCC would not apply to consideration 1 and 2. For the third consideration, VOCs controlled by CX01 would be converted using a combustion reaction. However, Subpart CCCC does not apply in this case because a VOC emitted from the "demanufacturing" of refrigerators is not considered a solid waste, a non-hazardous secondary material, or a contained gaseous material as defined by 40 CFR 60.2265, 40 CFR 241, or 40 CFR 258.2. This is primarily substantiated by the following: 1. As defined by Subpart CCCC, a contained gas is a gas that is in a container when that container is combusted. Since the blowing agent is not received in a container and not combusted in a container, it would not be considered a contained gas. 2. The feedstock for the plant is not obtained from sources of discarded materials and not considered solid waste itself. It is obtained (negotiated and often purchased) from vendors looking to recycle the appliances and materials and specifically keep them out of the waste stream. The Department agrees that for considerations 1 and 2, a sufficient amount of information has been submitted to justify that there is no combustion of the chemicals occurring, and that the compounds are only being converted into acid gases so that they can subsequently be scrubbed out. However, in addition to this justification, the facility is conducting source testing [Conversion Efficiency on CX01 for both refrigerants and VOC]. As for the 3rd consideration, VOCs being controlled by CX01, the EPA Office of Solid Waste and Emergency Response has provided guidance in its letter to Mr. Tim Hunt, Senior Director, Air Quality, Washington, dated May 13, 2011, that the EPA hasn't changed its prior determination that a gaseous process stream being combusted in an air pollution control device is not considered a contained gaseous material. Since this particular gas stream is not a contained gaseous material, it does not meet the definition of being a solid waste for 40 CFR 258.2 and subsequently is not a non-hazardous material, and as such is not subject to CCCC.
40 CFR 61 and 61-62.61	This facility does not emit subject pollutants in a quantity that would make them subject.
40 CFR 63 and 61-62.63	The facility is an area source for HAPs, because it taken limits of less than 10 TPY, for individual HAP, and less than 25 TPY, for combined HAPs. Subpart 6J "NESHAP for Industrial, Commercial, and Institutional Boilers Area Sources" does not apply because the process heater on-site is not an affected source.

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REGULATORY APPLICABILITY REVIEW	
Regulations	**Comments/Periodic Monitoring Requirements**
61-62.68	This facility does not store or use chemicals subject to 112 (r) above the threshold quantities.
40 CFR 64 (CAM)	This is not a Title V facility.

AMBIENT AIR STANDARDS REVIEW	
Regulations	**Comments/Periodic Monitoring Requirements**
Standard No. 2	This facility has demonstrated compliance with this Standard through modeling; see modeling summary dated 11/19/2014. The following operational restriction has been established to ensure compliance with the modeled emission rates: A twelve month rolling sum shall be less than 0.88 tons of HF.
Standard No. 7.c	Applicable pollutants are either exempt or have been deferred; see modeling summary dated 11/19/2014.
Standard No. 8 (state only)	This facility has demonstrated compliance with this Standard through modeling; see modeling summary dated 11/19/2014.

PUBLIC NOTICE

This Conditional Major Permit will undergo a 30-day public notice period in accordance with SC Regulation 61-62.1, Section II.N. The comment period was open from August 3, 2018 to September 1, 2018 and was placed on the BAQ website during that time period.

SUMMARY AND CONCLUSIONS

It has been determined that this source, if operated in accordance with the submitted application, will meet all applicable requirements and emission standards.